

Name: \_\_\_\_\_

TP: \_\_\_\_\_

Due Date: Thursday, Nov. 29<sup>th</sup>, 2012**Simplify!**

1)  $\sqrt{9x^3}$

$$\sqrt{9} \cdot \sqrt{x^3}$$

2)  $\sqrt{8x^4}$

$$\sqrt{8} \cdot \sqrt{x^4}$$

3)  $\sqrt{63m^3}$

$$\sqrt{63} \cdot \sqrt{m^3}$$

4)  $\sqrt{150m^4n^3}$

$$\sqrt{150} \cdot \sqrt{m^4} \cdot \sqrt{n^3}$$

5)  $\sqrt{75xy} \cdot \sqrt{2x^3}$

$$\sqrt{75 \cdot 2} \cdot \sqrt{x \cdot x^3} \cdot \sqrt{y}$$

6)  $3\sqrt{ab^2} \cdot \sqrt{ab^2}$

$$3 \cdot \sqrt{a \cdot a} \cdot \sqrt{b^2 \cdot b^2}$$

7)  $\sqrt{7xy^2} \cdot 3\sqrt{x}$

$$3 \cdot \sqrt{7} \cdot \sqrt{x \cdot x} \cdot \sqrt{y^2}$$

8)  $\sqrt{3}(3\sqrt{5} + 7)$

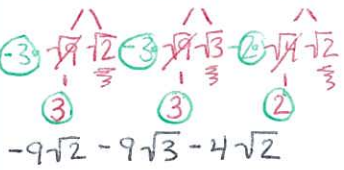

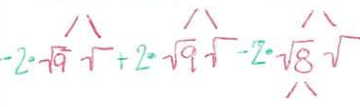
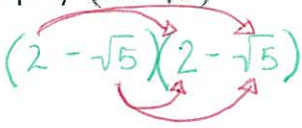
$$3 \cdot \sqrt{3 \cdot 5} + 7 \cdot \sqrt{3}$$

9)  $\sqrt{2}(9 + 2\sqrt{2})$

10) $(\sqrt{7} + \sqrt{2})(\sqrt{7} - 3\sqrt{2})$ F.O.I.L $\sqrt{7 \cdot 7} - 3\sqrt{2 \cdot 7} + \sqrt{2 \cdot 7} - 3\sqrt{2 \cdot 2}$	11) $(\sqrt{3} + \sqrt{5})(6\sqrt{3} + \sqrt{5})$	
12) $(\sqrt{2} + \sqrt{3})^2$ $(\sqrt{2} + \sqrt{3})(\sqrt{2} + \sqrt{3})$	13) $(2\sqrt{5} + 7)^2$ $(2\sqrt{5} + 7)(2\sqrt{5} + 7)$	
14) What is the value of $4^0 + 4^{-1} + 4^1$ ? $a^0 = 1$ $a^{-3} = \frac{1}{a^3}$	15) For all real values of $x$ , if $(x^{a+2})^4 = 16$ , $a$ must be equivalent to what value? a) 14 b) 10 c) 3.5 d) 2	16) For all real values of $x$ , if $\frac{x^{3a+1}}{x^a} = x^9$ , $a$ must be equivalent to what value? a) 2 b) 2.67 c) 3 d) 4 $\frac{x^4}{x^2} = x^2$
17) What is the value of $b$ in the expression below: $x^a \cdot x^b = x^{a+b}$ $x^{b+1} x^{2b+9} = x^{40}$	18) Simplify: $5^1 - 5^{-1} + 5^0$ .	19) Simplify: $\frac{3(g^3 h^5)^3}{(6gh^6)^2}$

Name: \_\_\_\_\_ TP: \_\_\_\_\_

Failure to show work on all problems or use complete sentences will result in a LaSalle.

<p>1) Simplify</p> $-3\sqrt{18} - 3\sqrt{27} - 2\sqrt{8}$  $-9\sqrt{2} - 9\sqrt{3} - 4\sqrt{2}$	<p>2) Simplify</p> $2\sqrt{12} + 3\sqrt{27} - 2\sqrt{20}$ 
<p>3) Simplify</p> $-2\sqrt{36} + 2\sqrt{54} - 2\sqrt{24}$ 	<p>4) Simplify</p> $-2\sqrt{72} - 3\sqrt{18} + 2\sqrt{8}$
<p>5) Simplify: <math>\sqrt{18mr^2} \cdot 2\sqrt{mr}</math></p> $2 \cdot \sqrt{18} \cdot \sqrt{m^2} \cdot \sqrt{r^3}$	<p>6) Simplify: <math>(2 - \sqrt{5})^2</math> F.O.I.L</p> 
<p>7) Simplify: <math>\frac{2}{\sqrt{3x^3}} \cdot \frac{\sqrt{3x^3}}{\sqrt{3x^3}}</math></p>	<p>8) Simplify:</p> $\frac{2\sqrt{5}}{4\sqrt{80}}$
<p>9) Convert scientific notation into standard notation</p> $7.24 \times 10^{-9}$ <ul style="list-style-type: none"> <li>Negative exponents make numbers VERY small.</li> <li>To make a number smaller, move the decimal to the <u>LEFT</u>.</li> </ul>	<p>10) Convert scientific notation into standard notation</p> $2.76 \times 10^6$ <ul style="list-style-type: none"> <li>Positive exponents make numbers VERY big.</li> <li>To make a number bigger, move the decimal to the <u>RIGHT</u>.</li> </ul>



Thursday Mixed Review

<p>11) Line <math>\ell</math> and line <math>p</math> are parallel. Given that the equation for line <math>p</math> is <math>4x=2</math> and line <math>\ell</math> passes through the point <math>(0,7)</math>, what is the equation for line <math>\ell</math>?</p> <p>perpendicular lines have opp/inverse slopes  <math>y = mx + b</math>  <math>\hookrightarrow</math> slope</p>	<p>12) What is the equation for the line perpendicular to <math>6x=6y+9</math> and through the point <math>(3,9)</math>?</p>
<p>13) Point <math>m</math> is the <u>midpoint</u> to line segment <math>BC</math>. Point <math>C</math> has the coordinates <math>(6,3)</math> and point <math>B</math> has the coordinate <math>(-6,5)</math>, what are the coordinates for point <math>B</math>?</p> <p><math>m = \left( \frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)</math></p>	<p>14) On a number line, point <math>A</math> is at <math>-8</math> and point <math>B</math> is at <math>-14</math>. What is the coordinate of the midpoint, <math>m</math>?</p>
<p>15) What is the slope of the line that passes through the points <math>(-5,2)</math> and <math>(8,4)</math> in the standard coordinate plane?</p> <p>slope = <math>\frac{y_2 - y_1}{x_2 - x_1}</math></p>	<p>16) Write the equation of the line that passes through the points <math>(3,4)</math> and <math>(0,5)</math>?</p> <p><math>y = mx + b</math>  <math>m = \frac{y_2 - y_1}{x_2 - x_1}</math></p>

**PUSH IT TO THE LIMIT.**



Name: \_\_\_\_\_ TP: \_\_\_\_\_

Failure to show work on all problems or use complete sentences will result in a LaSalle.

*For problem 1, you must GRASP it on a separate piece of graph paper.*

1) A construction worker is working on the roof of a building. A drop of paint falls from a rafter that is 225 feet above the ground.

A) Write a vertical motion model to represent the path of the drop of paint.

B) What is the height of the drop after 2.25 seconds?

C) How much time elapses until the drop of pain hits the ground?

2) Simplify:  $\sqrt{75xy} \cdot \sqrt{2x^3}$

$$\sqrt{75 \cdot 2} \cdot \sqrt{x^3 \cdot x} = \sqrt{4}$$

3) Simplify:  $\sqrt{4ab^2} \cdot \sqrt{ab^3}$

$$\sqrt{4} \cdot \sqrt{a \cdot a} \cdot \sqrt{b^2 \cdot b^3}$$

4) Simplify:  $\sqrt{\frac{2x^2}{48}}$

$$\frac{\sqrt{2x^2}}{\sqrt{48}} = \frac{\sqrt{48}}{\sqrt{48}}$$

5) Simplify:  $\frac{3}{\sqrt{2x^3}}$

$$\frac{\sqrt{2x^3}}{\sqrt{2x^3}}$$

6) Simplify:  $\sqrt{\frac{(-3)^2}{49x^2}} = \frac{\sqrt{(-3)^2}}{\sqrt{49x^2}} = \frac{\sqrt{(-3)^2}}{\sqrt{49} \cdot \sqrt{x^2}}$

7) Simplify:  $\sqrt{2(4 - 2\sqrt{20})}$

$$4\sqrt{2} -$$

8) Simplify:

$$\frac{5st^4 \cdot 3st^{-2}}{3s^8t} = \frac{15st^2}{3s^8t} = \frac{15}{3} \cdot \frac{s}{s^8} \cdot \frac{t^2}{t}$$

9) What is the value of  $g$ ?

$$(x^{2g+2})^3 = x^{10g}$$







# Mixed Review

10) Line  $\ell$  and line  $p$  are perpendicular. Given that the equation for line  $p$  is  $5x+6y=2$  and line  $\ell$  passes through the point  $(-3,2)$ , what is the equation for line  $\ell$ ?

1. rearrange to  $y=mx+b$
2. Find slope (Perpendicular lines have opp/inverse slope)
3. Substitute values in  $y=mx+b$  to find 'b'.
4. Re-write  $y=mx+b$  with 'm' and 'b'

11) What is the equation for the line perpendicular to  $4x=8y+3$  and through the point  $(2,3)$ ?

\*same as #10

12) Point m is the midpoint to line segment BC. Point C has the coordinates  $(2,7)$  and point m has the coordinate  $(-6,3)$ , what are the coordinates for point B?

$$\text{midpoint} = \left( \frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

13) On a number line, point A is at -2 and point B is at 23. What is the coordinate of the midpoint, m?

$$\frac{x_2 + x_1}{2}$$

14) What is the slope of the line that passes through the points  $(-8, 3)$  and  $(2, -9)$  in the standard coordinate plane?

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} \quad y = mx + b$$

15) Find the slope of the line that passes through the points  $(5, -2)$  and  $(-5, -2)$ .

**PUSH IT TO THE LIMIT.**

